

**YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF STATISTICS
POST GRADUATE DIPLOMA IN RESEARCH STUDIES**

**AWARENESS AND PRACTICE OF ADOLESCENTS REGARDING
JUNK FOODS**

JULY, 2023

YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF STATISTICS
POST GRADUATE DIPLOMA IN RESEARCH STUDIES

**AWARENESS AND PRACTICE OF ADOLESCENTS REGARDING
JUNK FOODS**

This term paper is submitted to the Board of Examination as partial fulfillment of the requirements for the Post Graduated Diploma Research Studies.

Approved by the Board of Examiners

Supervised by

Hlaing Hlaing Moe

Dr. Hlaing Hlaing Moe

Professor/ Head

Department of Applied Statistics

Yangon University of Economics

Submitted by

Mg Aung Thu Soe (Roll No. 1)

Ma Aye Chan Cho (Roll No. 2)

Ma Ei Ei Nyein (Roll No. 4)

Post Graduated Diploma Research Studies

Yangon University of Economics

JULY, 2023

ACCEPTANCE

Accepted by the Board of Examiners of the Department of Statistics, Yangon University of Economics in partial fulfillment for the requirement of the Postgraduate Diploma in Research Studies.

Sanda

(Chief Examiner)
Dr. Sanda Thein
Professor
Department of Statistics
Yangon University of Economics

Hlaing Hlaing Moe

(Supervisor)
Dr. Hlaing Hlaing Moe
Professor/Head
Department of Applied Statistics
Yangon University of Economics

g

(Examiner)
Daw Khin Than Sint
Associate Professor
Department of Applied Statistics
Yangon University of Economics

JULY, 2023

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to Rector Dr. Tin Tin Htwe and Pro-Rectors, University of Economics, Yangon for allowing us to conduct this study. We also wish to express our gratitude to Professor Dr. Hlaing Hlaing Moe, Head of Department of Applied Statistics, who is not only our Program Director but also our supervisor, for her well-founded guidance, valuable supervision, feedback and support to complete this term paper throughout the research process. We are also grateful to our examiners Dr. Sanda Thein, Professor from Department of Statistics and Daw Khin Than Sint, Associate Professor from Department of Applied Statistics for their valuable and knowledgeable comments on our group term paper.

We are also appreciative to the students who willingly participated, generously gave their precious time and shared their valuable perceptions. This study would not have been possible without their participation. Last of all, we express our deepest thanks to our families and colleagues for their support and encouragement throughout this research journey. We want to express our sincere gratitude to all those who have contributed to the successful completion of this research paper in one way or another.

ABSTRACT

Junk food is empty of calories food which is also lack of vitamins, minerals, amino acid and fiber diet. The influence of junk food among the adolescent are changing of lifestyle and dietary habits directly or indirectly to the risk of many non-communicable diseases. This study was done to assess the awareness and practice of junk foods among adolescents. A cross-sectional study was conducted among adolescents from University of Nursing, Yangon. A simple random sampling technique was used to select the sample and the sample size was 152 first year students. Self-administered structured questionnaire was used for data collection and descriptive statistics and Chi-Square test were used to analyze the data. The results showed that 82.2% of the adolescents had high level and 17.8% had moderate level of awareness. Moreover, for practice level, 13.8% had poor level, 60.5% had moderate level and 25.7% had good level of practice. The study found that there was association between age, gender, father's education, occupation and weight, and practice level of the adolescents regarding junk food consumption. There was no association between the level of awareness and practice among adolescents on junk food consumption. The results concluded that although adolescents have moderate and high level of awareness, the level of practice had lessened. The more the practice of taking junk food, the more the higher risk of obese. According to the result, it needs to generate the awareness and instruct the practice how to reduce junk food consumption in daily life. People should avoid the bad practice of taking junk food in order to control unpredictable health threatened to human beings.

CONTENT

	Page
ACKNOWLEDGEMENT	
ABSTRACT	
CONTENTS	
LIST OF TABLES	
LIST OF FIGURES	
LIST OF ABBREVIATIONS	
Chapter I Introduction	1
1.1 Rationale of the Study	1
1.2 Objective of the Study	3
1.3 Method of Study	4
1.4 Scope and Limitations of the Study	4
1.5 Organization of the Study	4
Chapter II Literature Review	5
2.1 Theoretical Background	5
2.2 Review of Related Studies	9
Chapter III Research Methods	14
3.1 Background	14
3.2 Survey Design	14
3.3 Sample Size Determination	14
3.4 Statistical Methods	15
3.5 Questionnaire Design	16
Chapter IV Results and findings	17
4.1. Socio-demographic Characteristics of the Adolescents	17
4.2. Levels of Awareness of the Adolescents	19
4.3. Levels of Practice of the Adolescents	21
4.4. Association between Socio-demographic Characteristics and Awareness of the Adolescents	23
4.5 Association between Socio-demographic Characteristics and Practice of the Adolescents	25
4.6 Association between Awareness and Practice of the Adolescents	28
Chapter V Conclusion	29
REFERENCES	
APPENDIX	

LIST OF TABLES

Table 4.1 Socio-demographic Characteristics of the Adolescents

Table 4.2 Levels of Awareness of the Adolescents regarding Junk Food Consumption

Table 4.3 Levels of Practice of the Adolescents regarding Junk Food Consumption

**Table 4.4 Association between Socio-demographic Characteristics and Awareness of the
Adolescents regarding Junk Food Consumption**

**Table 4.5 Association between Socio-demographic Characteristics and Practice of the
Adolescents regarding Junk Food Consumption**

**Table 4.6 Association between Awareness and Practice of the Adolescents regarding Junk
Food Consumption**

LIST OF FIGURES

Figure 4.1 Levels of Awareness of the Adolescents regarding Junk Food Consumption

Figure 4.2 Levels of Practice of the Adolescents regarding Junk Food Consumption

LIST OF ABBREVIATIONS

ADHD -	Attention Deficit Hyperactivity Disorder
NCD -	Non Communicable Disease
WHO -	World Health Organization

CHAPTER I

INTRODUCTION

Healthy dietary products and food are important issue in global health improvement for all human beings. Fresh food and vegetables are health benefits such as reducing the risk of becoming overweight or obese and unpredictable non-communicable disease (NCD). World Health Organization (WHO) recommended that unhealthy diet and lack of physical exercise leading to global health risk. Among these problem, taking a lot of junk food consumption also threatened too many health problems particularly overweight and NCD such as diabetes, hypertension and heart disease (WHO, 2020). The spread of NCD is highly concern with taking junk food. Fast food and junk food ingredients and dietary practice need to provide advanced knowledge to people is also necessary (Food and Drug Administration, 2014).

WHO reported that junk foods are high in energy, low in nutrient content and high in fat, snack foods that contain added sugar (that is, sugary biscuits, cream-filled sponge cakes, candy and fizzy drinks) or have high salt content (WHO, 2017). Unhealthy diet is mainly affected to children and adolescent, among them, almost 60% of adolescents in some Pacific island countries are highly consume fast food. Growing rates of overweight and obesity are also linked to a rise in NCD, such as diabetes, cardiovascular disease and cancer (WHO, 2016).

Junk food is empty of calories food which is also lack of vitamins, minerals, amino acid and fiber diet. The name of junk food or fast food is used as interchangeable. Both of these are becoming high energy dense food and sedentary lifestyle diet among younger generation. According to available in convenience places, low cost, good taste, peer pressure and marketing strategies, there are increasing number of people who eating junk food is popular in the urban region. It is also a cultural trend among adolescent (Nayak, 2020).

1.1 Rationale of the Study

Usually adolescence need more nutrition than other age group due to rapid growth and development of body. Micro nutritional deficiency and overweight is the major nutritional problem of adolescent. It occurred commonly due to the imbalance of food and unhealthy practice of adolescent. People who are eating habits of junk food have been seen a higher risk of stomach, colorectal, and lung cancers. Consumption of junk

food more than two times per week are highly increased rate of causing hypertension, diabetes and hyperlipidemia. Fast food restaurants were found to be positively associated with diabetes prevalence in all countries (Mohiuddin, 2020).

The adolescents aged between 5 and 19 years were affected by overweight or obesity. It is a major health threaten to almost all countries and contributing global burden of disease for people. Adolescent can easily change their habit varying by environment so they are called nutritionally vulnerable group. Food environments are also the influence of the health burden because it can be easily available, accessible, affordable and marketing strategies. Junk food are a part of food environment and which contains saturated fats, trans- fats, high sugar and salt for leading of negatively impact to human bodies. Food marketing including junk food also threatens children's rights, affecting their physical health as well as their emotional, mental and spiritual well-being (WHO, 2022).

The components of junk food contain many harmful effect to health and it is unsafe food for all ages of human beings. The influence of junk food among the adolescent are changing of lifestyle and dietary habits directly or indirectly so finally leading to the risk of many non-communicable diseases. Moreover, it is very harmful to the physical, psychosocial and economic conditions of adolescents (Shrestha, 2021).

The increased digitalization and lessened control age of parents, adolescent are commonly consuming junk food in their daily life. Although the adolescents are higher consumption of the junk food at school or watching TV and peer pressure, mostly they do not know the harmful effect and ingredients on it. Almost 20% of high calories and obese children are eating junk food and which are impact to physical, psychosocial and unhealthy food environment lifestyle changes whenever they reached in adolescent. The overweight or obese, complications to unhealthy lifestyle and changes of dietary habits threatened to the transition age of children to adolescent through the current health problem of obese children and NCDs (Gketsios, *et al.*, 2022).

Moreover, the higher rate of consumption of junk food are severe adverse effect on health today world. Healthy nutritious food is replaced by junk food and eating habit of junk food are influencing too many people (Kumari, 2017). The ingredients of junk food are not only additives but also cause health problems such as heart disease and

finally leading to cancers because fat and calories are a lot more than required based on human metabolism. This makes the teenager more prone to disease (Sharma, 2013).

Consumption of junk foods is also associated with obesity, dyslipidemia, impaired glucose tolerance, dental caries and gastritis. However, the harmful effect of junk food the adolescent who are more eating junk food medical students than non- medical students. It is negatively influence their eating habits and changed on health life in the future (Paudel and Shrestha, 2021). There is decreased number of practice on reading ingredients of junk food is also major challenged for health. Mostly are taking due to taste, cheaper, easily available and convenience diet for them and not aware for harmful effect on junk food (Nayak, 2020). This study can be beneficial in improving the health and wellbeing of the adolescents.

Globally, the consumption of junk foods is popular among adolescent. Instead of junk food the traditional food is markedly placed in developed or developing countries. In South East Asia region, a lots of people are taking junk food in highly trend. It is a huge evidence of the negative impacts on the human body (Bohara, *et al.*, 2021). Myanmar is one of the Asia countries and the Youngers who lived in urban region are mainly consume the fast food or junk food. Therefore, the knowledge and awareness of taking junk foods among adolescents is also required to prevent unnecessary health risk in the future.

1.2 Objectives of the Study

The objectives of the study are:

1. To describe the socio-demographic characteristics of the adolescents.
2. To assess the levels of awareness and practice of the adolescents regarding junk food consumption.
3. To identify the relationships between socio-demographic characteristics and awareness and practice of the adolescents regarding junk food consumption.
4. To identify the association between awareness and practice of junk foods.

1.3 Method of Study

In this study, descriptive method was used to describe the socio-demographic characteristics of adolescents and the levels of awareness and practice of adolescents regarding junk food consumption. The chi-square test was used to identify the relationships between socio-demographic characteristics and junk food consumption. To determine the relationship between awareness and practice of junk foods, chi-square test was done.

1.4 Scope and Limitations of the Study

This study was focused on the relationship between awareness and practice of junk foods for the adolescents, nursing students who attending at University of Nursing, Yangon. The data was received from Google Form, internet sources and responded by individual volunteer participation. There were the limitations such as reporting bias due to the self-reporting questionnaires by all students who are living in same hostel. However, to reduce this type of bias and increase the validity of the given responses, the investigators explained throughout the whole procedure of completing the questionnaire to respond any potential misconceptions. This study explored just the adolescents' age, gender, religion, ethics, father education, mother' education, father occupation, mother' occupation, weight and height of the respondents; thus, others socio- demographic data was limited. There was another limitation that the adolescents who participated in the study were more female students than the male students due to the study area.

1.5 Organization of the Study

This paper is divided into five chapter. In chapter I, the introduction which includes rationale of the study, objective of the study, method of study, scope and limitations of the study and organization of the study. In chapter II, literature review of the study for junk food and other related studies were described. The research method which includes background of the research, survey design, sample size determination, statistical method and questionnaires design were designated in chapter III. The results and findings of this study were explored in Chapter IV and finally conclusion of the study was presented in Chapter V.

CHAPTER II

LITERATURE REVIEW

In this chapter, literature review was stated with the headings of theoretical background and reviews on related studies of junk foods consumption. In theoretical background, about junk food, adolescents' dietary habit and risk of junk food consumption were involved. Reviews on related studies consisted of previous studies concerned with the junk food consumptions of adolescents.

2.1 Theoretical Background

Junk foods are foods that deficiency of nutrients, vitamins and minerals, and are high in salts, sugars, and fats. Junk food is titled because it doesn't good for healthy, particularly if it's eaten to excess. Some representatives of junk food include cakes and biscuits, fast foods (such as hot chips, burgers and pizzas), chocolate and sweets, processed meat (such as bacon), snacks (such as chips), sugary drinks (such as sports, energy and soft drinks) and alcoholic drinks. Increased junk food consumption among all age groups and more common to young adults is an emerging public health challenge with global prevalence of around 70% (Mondal, *et al.*, 2021).

Rapidly changing dietary practices and an increasing sedentary lifestyle predispose to obesity-related non-communicable diseases, including insulin resistance diabetes, neuro -degeneration, and psychological changes, stroke, headache/precipitation of migraine, the metabolic syndrome, adult-onset diabetes, non-insulin-dependent diabetes, coronary artery diseases, poly cystic ovarian syndrome, non-alcoholic fatty liver disease, cancers, and autoimmune disorders and site-specific neoplasms, both in children and in adults. Obesity related non-communicable diseases are increasing in many developing countries (Mohiuddin and Nasirullah, 2019)

Junk foods contain a lot of unhealthy components which are unsafe not only for children, but also for people of all ages. Adolescence is the transitional phase of growth and development between childhood and adulthood. The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19. This age range falls within WHO's definition of young people, which refers to individuals between ages 10 and 24 (Csikszentmihalyi, 2023).

Adolescence is a time of changing lifestyles and food habit changes that affect both nutrient needs and intake. Adolescent drive for individuation means more opportunity

to assert food choices and expand or narrow healthy options. Adolescence can be divided into three stages. Early adolescence (11-14 years of age) is characterized by the onset of puberty and increased cognitive development. Middle adolescence (15-17 years of age) is characterized by increased independence and experimentation. Late adolescence (18-21 years of age) is a time for making important personal and occupational decisions (Mishra, 2013).

Adolescence dislike homemade healthy food. Adolescence is a time of rapid physical, emotional, and cognitive changes that prepare young people for adulthood. This sudden growth spurt is associated with hormonal, cognitive, and emotional changes that make adolescence an especially vulnerable period of life. Foremost, there is a greater demand for calories and nutrients due to the dramatic increase in physical growth and development over a relatively short period of time (Mishra, 2013).

Poor nutrition during any of these stages can have lasting consequences on an adolescent's cognitive development, resulting in decreased learning ability, poor concentration, and impaired school performance. Eating Burger and Pizza increases cholesterol in human body. The fat in human body increases. The increase fat is dangerous for heart. Drinking soft drinks adds dangerous toxins in human body. It affects the bone, skin and kidney. Most of the adolescence during their meal time eat junk food and get addicted to the taste of the junk food. Because of low nutritive value and high calories, adolescence become obese (Paudel and Shrestha, 2021).

Junk foods are also laced with colors which are often in edible, carcinogenic and harmful to the body. These foods can affect digestive system; its effects can emerge after many years. Coloring food can cause hyper activity and lapses of concentration. Hence, young people suffering from learning disabilities are advised not to eat food with artificial coloring. Adolescent period is characterized by heavy demands of calorie and proteins. The appetite of the child increases and tends to consume more carbohydrate foods. Intake of vitamin C and vitamin A may be low due to improper habits of eating snacks. Nutritionist, doctors, and other health advocates often work to educate people about junk food, encouraging them to eat well balanced diets which contain a high proportion healthy food (Paudel and Shrestha, 2021).

Some of the effects of poor nutrition are obesity, a poor nutritional diet full of fat and sugar can cause obesity. High cholesterol levels can cause clogged blood vessels and

lead to serious health problems. High blood pressure also known as hypertension, can be caused by poor diet and can lead to strokes, heart failure and kidney disease if left untreated. Diabetes being overweight and inactive, as well as a diet that is high in fat, carbohydrates, sugar and cholesterol, are all type 2 diabetes risk factors. Research suggests a poor nutritional diet may be linked to an increased risk of developing certain cancers, such as bowel cancer. A poor diet without enough vitamin D and calcium can increase the risk of osteoporosis; a health condition that causes bones to become weaker and more fragile. Other health conditions caused by poor diet, such as hypertension and high cholesterol, can increase the risk of stroke and heart disease (Ajmera, *et al.*, 2022).

Poor diets can slow growth, decay new teeth, promote obesity and sow the seeds of infirmity and debilitating disease that ultimately lead to incurable disease worse make life insufferable. Junk food simply means an empty calorie food. Dramatic changes and development of the physical, emotional and cognitive functions occur during adolescence. In order to achieve optimal growth and development during adolescence, the nutritional requirements are the highest across the life span. Practicing healthy eating behavior is one of the important factors to meet the nutritional needs of adolescents (Ajmera, *et al.*, 2022).

The causes of dramatic increase in consumption of junk food in adolescents are the taste change, quick and easy access, being delicious, family structure, low cost, and tendency to these foods. The roles of factors such as family and peers in the acquisition of nutrition knowledge and in taking measure to conduct a nutritional behavior. Family is the first founder of character, and intellectual values and standards of children. Psychologists believe that parents significantly affect the creation of thoughts and behavior in children (Mirhadyan, *et al.*, 2020).

The most important cues for action in the field of students' nutrition are mother, teachers, father, TV, friends, books, sister, brother, and magazine. The nutrition styles are different in terms of marital status, gender, and social class, furthermore, the age, body mass index, and social, cultural and economic capital affect nutrition styles in different ways. There has association between low socioeconomic status and malnutrition in adolescents and their parents. In this regard, the economic status is the most important factor affecting the amount and the type of food. Food intake is strongly

associated with income and has a positive relationship with dietary patterns and healthy food choices (Mirhadyan, *et al.* 2020).

Fast food is loaded with calories from refined sugar and fats, especially, the artery-clogging saturated and hydrogenated fats. Fast food is also addictive and hence it is very difficult to give up on their greasy and fatty foods and carbonated drinks and switch to healthier option. Both sugar and salt intake increase stroke risk, especially when consumed daily for years. Additionally, what is generally not appreciated is that the regular consumption of artificially sweetened soda creates more of a stroke risk. High salt does not merely raise blood pressure; it also causes microvascular hemorrhaging, which damages the interior walls of the blood vessels in the brain and increases permeability and the propensity for hemorrhagic stroke (Fuhrman, 2018).

For children who have less vision of the heart disease, cancer, high blood pressure or diabetes that might be fall them decades later, the tentacles of a junk food environment are virtually inescapable. Studies reveal that as early as the age of 30, arteries begin clogging and lay the base for future heart attacks. What adolescent eat from puberty affects their risks of prostate and breast cancer. Young people are especially vulnerable (Riley, *et al.*, 2018).

Worldwide food selection and consumption pattern have increased a lot towards readymade foods within a couple of decades. Exercise of brain has increased but normal physical exercise has got diminished. The consequences of these two have increased various health risks in young people. Dietary behavior is important for the development and growth of human beings. Ideally a person should have healthy food habit with borderline or no consumption of junk food. The person should have proper knowledge regarding nutrition and junk food to avoid junk food consumption (Mondal, 2021).

The brain is the organ in affecting how we think and move. Fast food and junk food are very low in nutrients; instead they are full with colorings, flavors and preservatives. Researchers have shown that junk food might cause dyslexia, ADHD (attention deficit hyperactivity disorder) and worse is autism. An individual's mood and attention are highly influenced by the food taken, which means it will affect the concentration. Consumption of large quantities of junk food is associated with a drastic reduction in the consumption of nutritious foods such as milk, fruits and vegetables. High revenues, rapid urbanization, free home delivery, mouthwatering commercials and foreign

cuisines have led to growing trend in the consumption of junk food (Mandoura, *et al.*, 2017).

Food additives used in junk food are found to be carcinogenic and can be allergic causing asthma and rashes which are also seen frequently among children. Added to this in developing countries there are problems like poor hygiene during preparation storage and handling of fast foods leading to contamination by microorganism (Joseph, *et al.*, 2015).TV advertisements with figures of poorer eating habits and higher junk food consumption, may lead children and teenagers to adopt unhealthier nutritional habits before they are emotionally prepared to comprehend them and prior to making wise decisions (Stiglic and Viner, 2019).

The modern way of life and society, as well as the long working hours of parents, often lead children to poorer eating habits and higher junk food consumption, yet literature also suggests that nutrition education in school settings, could help children adopt healthier consumption habits. However, even in cases of healthy family and school environments, the “digital explosion” and the increased digitalization of unhealthy food environments have a great negative impact on children’s eating behaviors and choices.

2.2 Reviews of Related Studies

Tamanekar, *et al.* (2021) conducted the survey on junk food and its toxic effects on youths of Sindhudurg. The study pinpointed that total 521 responses were received through survey question and around 58.8 % consume junk food 1-2 times a day on weekly basis, 27.1% indicated that they take 3-4 times weekly. Only 5.6% and 9 % consume daily or 4-6 times weekly respectively. Out of 521 respondents 36% youths said they suffer heartburn, 32.6 % said vomiting, 18.8 % said they suffer from diarrhea.

Paudel, *et al.* (2021) stated that awareness and practice of junk foods among adolescents in secondary level students in Nepal. The study found that nearly three fourth (72.6%) of the adolescent students knew the correct meaning of junk foods. A vast majority (91%) of them consumed junk foods because of the taste. Researchers found that there is no significant association between the level of awareness and practice of junk foods ($p < 0.05$). Taste, convenience and affordability were the foremost preference criteria for high consumption of junk foods among adolescents. Most of the students had a moderate awareness about junk foods and most had formed the habit of using junk foods in their daily life. On the other hand, parents also encouraged the use of junk

foods because of their busy schedule and school also encouraged them to eat junk foods on school premises. They brought junk foods in the classroom without any restriction from teachers and have eaten at the tiffin-time in the group.

Bohara, *et al.* (2021) stated that determinants of junk food consumption among adolescents in Pokhara Valley, Nepal. The study found that more than half of the participants (60.30%) consumed junk foods over the last 30 days, more prevalent among public school participants (65.1%) followed by participants of private school (56.3%). More than half of the participants consumed salty snacks (58.7%) followed by sweets (57.5%). The time of consumption was found to be higher together with friends (83.9%). The study found that consumption of junk foods among adolescent students was remarkably high in both public school and private school adolescents. Regardless of adequate knowledge on harmful consequences of junk foods, school-going adolescents are due to its easy availability and ready-to-use packaging.

Qiu, *et al.* (2021) studied that perceived parental attitudes are indirectly associated with consumption of junk foods and sugar-sweetened beverages among Chinese adolescents through home food environment and autonomous motivation. The results found that a low-nutrient with high-energy diet in adolescents has become one of the most important nutrition-related concerns globally. There are many negative impacts of junk foods on adolescents' brain function, showing that junk foods can lead to cognitive impairments and changes in reward processing. Additionally, high consumption of junk foods along with low consumption of fruits and vegetables is associated with an increased risk of depression among adolescents. Moreover, high consumption of junk foods significantly contributes to the high prevalence of overweight and obesity in children and adolescents.

Pahari, *et al.* (2020) demonstrated that perception and factors influencing junk food consumption among school children of Pokhara. The results showed that 6.8% of the respondents showed various reasons for junk food consumption such as easy availability, cheaper products in the market whereas in this study 16.3% of the participants showed easy availability of the junk food as a reason for junk food consumption. Moreover, the study indicated that there was a statistical association between the gender of the students and the preferred choice of junk food while the findings of the study showed significant association of level of knowledge with gender

and type of family of the respondents. Furthermore, advertisement was found to be one of the major influencing factors (13.6%) for junk food consumption among children while nearly half of the participants (42.2%) also found advertisement as the influencing factor in this study.

Mirhadyan, *et al.* (2020) conducted a study of junk food consumption and its associated factors in high school students in Rasht in 2017. The results found that sweet snacks were consumed the most (27.3%). Frequency of junk food consumption was significantly higher in students whose fathers had a university degree ($p = 0.037$) and those with monthly family income of more than 2 million Rials. The results indicated that students whose fathers have a higher education and income level have more tendencies toward junk food consumption; hence, it is worth considering the relevant factors in order to improve the adolescents' health.

Banik, *et al.* (2019) studied about the fast food consumption and obesity among urban college going adolescents in Bangladesh. The results found that majority of the participants (35.9%) consumed fast foods with friends. More than half of the participants (60.8%) consumed junk food as an alternative to breakfast.

Mohan, *et al.* (2019) conducted a study to assess the prevalence of obesity and overweight among adolescents in Dayanand medical college, Ludhiana, Punjab, India. Thousand samples were selected by random, purposive sampling. Data were collected by Questionnaire regarding dietary habits and life style. The results were analyzed statistically by applying students' t-test, Z-test and Chi-square test. Result of the study showed that mean [average] energy intake from the fast food meal among all participants was extremely large. The result found that overweight participants tended to under-report total energy intake compared with lean participants.

Mohammadbeigi, *et.al.* (2018) studied that fast food consumption and overweight prevalence in students and its association with general and abdominal obesity. The results pinpointed that overall, 72.4 percent consumed fast food. These students have consumed at least one kind of fast food. The most popular form of fast-food consumption was burger (44.4 %), pizza (39.7%), and fried chicken (13.8%), respectively.

Sapkota (2017) studied the junk food consumption among secondary level students in Chitwan. The results highlighted that 90.1% of the participants consumed junk food as

it tastes better. In addition, less than half (15.5%) of the participants consumed junk food due to the influence of TV advertisement. Aryal, *et al.*, (2016) also conducted the adolescent nutrition survey in Nepal. The results revealed that 71 percent of male adolescents and 59 percent of female adolescents were undernourished, and majority of adolescents (94 %) reported that they usually eat junk or processed food.

Boylan, *et al.* (2017) assessed the junk food consumption among Australian children using survey method. The study showed that there were fewer high junk food consumers than low junk food consumers among students from high socio-economic status neighborhoods. This study found that children from Middle Eastern cultural backgrounds had higher junk food consumption. High junk food consumers were more likely to consume take-away more than 3/week, eat dinner in front of the television, receive sweet rewards, be allowed to consume snacks anytime, have soft drinks available at home and a TV in their bedroom.

Joseph, *et al.*, (2015) described the fast food consumption pattern and its association with overweight among high school boys in Mangalore City of Southern India. The results found that out of 300 participants, 41(13.7%) were overweight and 8 (2.7%) were obese. 292(97.3%) were fast food users of which 42(14.4%) consumed it every day. Majority of participants were introduced to fast foods through television commercials 193(64.3%). 73(57%) developed this habit as they were bored with home food. Awareness of harmful effects of fast food consumption was known to 186(62%) students and this was found to be associated with the perceived need to control its usage ($p < 0.001$). Parental consumption of fast foods was found to influence fast food consumption among children ($p = 0.024$). As many as 68(22.7%) and 206(68.7%) children were not eating vegetables and fruits respectively every day. Increased frequency of fast food consumption in a week was found to be associated with overweight or obesity among children after adjusting the effects of confounders.

Sharma (2013) suggested that junk food consumption alters brain activity in a manner similar to addictive drugs like cocaine or heroin. After many weeks with unlimited access to junk food, the pleasure centers become decentralized, requiring more food for pleasure. Another study of Gopal, *et al.*, (2012) stated that student's perspective on junk foods. The results showed that 60.8% of the participants consume junk food as an alternative to breakfast. Also, the reason for consuming junk food was changing

lifestyle by 14.2% of the participants while 8.7% of the participants chose changing lifestyle as the reason for consuming junk food in this study. Moreover, 16.2% of the participants check the label of the junk food whereas in this study very few participants (6.5%) check the label of the junk food.

On reviewing the above related studies, the awareness and practice of the adolescents regarding junk food consumption were essential for the prevention of threatening health problems in the later life. Therefore, the existing knowledge and awareness of the adolescents should be promoted to the better practice on the consumption of junk food.

CHAPTER III

METHODOLOGY

In this chapter, background of study area, survey design, sample size determination, statistical analysis and questionnaire design were explained.

3.1 Background

On the report of Health Survey in Myanmar (2016), the junk food consumption of the students (aged 13 -17) were more than 2 days per week and the more common age was 16-17 years. Based on these findings, the adolescents who attended at University of Nursing, Yangon were selected to conduct the survey regarding junk food consumption. At University of Nursing, Yangon, there were students attending four-year Generic course. Among these students, the students from First Year Course were selected for this study because the common age of the students was 17 to 19 years.

3.2 Survey Design

A descriptive cross-sectional study was conducted to examine the awareness and practice of adolescents regarding junk foods by using a self-administered structured questionnaire. A structured questionnaire was contributed via the google form for data collection.

3.3 Sample Size Determination

A simple random sampling technique was used to select the sample. The sample size calculated by using Cochran (1963) formula.

$$n = Z^2 pq / e^2$$

Where, n = Sample size

Z = 1.96 for 5 % significance level

p = Estimated true proportion

q = 1 - p

e = The maximum error deemed acceptable

To select the sample size for the study, 95 % confidence level gives Z values of 1.96, p which the estimated true proportion is 0.5, q is the competent of p (1 - p) and e which the maximum error acceptable value is 0.08.

$$n = Z^2 pq / e^2 = (1.96)^2 0.5*0.5 / (0.08)^2 = 150$$

The required sample size was 150 students. Therefore, the total sample size was 152 students.

3.4 Statistical Methods

The Chi-Square test of independence is used to determine if there is a significant relationship between two nominal (categorical) variables. The frequency of each category for one nominal variable is compared across the categories of the second nominal variable. The data can be displayed in a contingency table where each row represents a category for one variable and each column represents a category for the other variable. The chi-square test of independence can be used to examine this relationship. The null hypothesis for this test is that there is no relationship between two variables. The alternative hypothesis is that there is a relationship between the two variables.

The following formula is applied to calculate the value of the Chi-Square test of Independence:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

O_{ij} = observed frequencies

$$E_{ij} = \text{expected frequencies} = \frac{\sum_{k=1}^c O_{ik} \sum_{k=1}^r O_{kj}}{N}$$

$\sum_{k=1}^c O_{ik}$ = sum of the observed frequencies for i^{th} column

$\sum_{k=1}^r O_{kj}$ = sum of the observed frequencies for k^{th} row

N = total number of observation

The critical value for the chi-square statistic is determined by the level of significance (typically 0.05) and the degree of freedom. The degree of freedom for the chi-square are calculated using the following formula: $df = (r-1)(c-1)$ where r is the number of rows and c is the number of columns. If the observed chi-square test statistic is greater than the critical value, the null hypothesis can be rejected.

There are some assumptions for Chi-Square independence test. The data are obtained from a random sample. The expected value in each cell must be 5 or more. If the expected values are not 5 or more, combine categories.

3.5 Questionnaire Design

A structured questionnaire was designed based on the primary objective of the study. A questionnaire was developed after a detailed review of different relevant literature by the researchers. The questionnaire composed of two parts: Part I consisted of socio-demographic characteristics including age, date of birth, gender, religion, ethnic, father's education, mother's education, father's occupation, mother's occupation, weight and height. Part II included awareness and practice questions. Awareness questions include twenty items. Questionnaires were constructed in true, false format. 5-point Likert scale of practice questionnaires consists of 20 items (1= always, 2 = mostly, 3 = often, 4 = sometimes, 5 = never).

CHAPTER IV

RESULTS AND FINDINGS

A total of 152 adolescents from First Year Course, University of Nursing (Yangon) participated in this study. This chapter contained socio-demographic characteristic of adolescents, the level of awareness and practice of adolescents on junk food consumption, relationship between and associations between socio-demographic characteristics and awareness and practice of the adolescents regarding junk food consumption and the association between awareness and practice of the adolescents regarding junk food consumption with appropriate graphs and tables.

4.1 Socio-demographic Characteristics of the Adolescents

In the socio-demographic characteristics, the age, gender, religion, ethnics, father education, mother education, father occupation, mother occupation, weight and height of the adolescents were assessed. The findings were described with the frequency and percent in Table (4.1).

Table (4.1) Socio-demographic Characteristics of the Adolescents

Variables		No. of adolescents	Percentage (%)
Age (Years)	17	25	16.4
	18 and above	127	83.5
Gender	Male	14	9.2
	Female	138	90.8
Religion	Buddhist	145	95.4
	Others	7	4.6
Ethnics	Burmese	132	86.8
	Others	20	13.2
Father education	Middle school and below	78	51.3
	High school and above	74	48.7
Mother education	Middle school and below	77	50.7
	High school and above	75	49.3

Father occupation	Own Business	73	48.0
	Others	79	52
Mother occupation	Employed	52	34.2
	Unemployed	100	65.8
Weight (Kg)	35-44	44	28.9
	45 and above	108	71.1
Height (cm)	Below 160	85	55.9
	160 and above	67	44.1

Survey Data: May (2023)

In this study, the total of 152 adolescents were included from First Year Course, University of Nursing (Yangon) with a response rate of 100%. According to Table (4.1), it was found that of all 152 adolescents, the 127 (83.5%) adolescents were in the age of 18 years and above. The 14 (9.2%) adolescents were males and the 138 (90.8%) adolescents were females. The majority of adolescents (95.4%) were Buddhism and the 132 (86.8%) were Burmese.

About 78 (51.3%) adolescents' father education was middle school level education and below and the 74 (48.7%) were high school level education and above. Just over half (50.7%) of the adolescents' mother education were middle school level education and below and the 75 (49.3%) were high school level education and above.

Nearly half (48%) of the adolescents' father occupation were own business and over half (65.8%) of the adolescents' mothers were unemployed (including housewife, retired and others). The body weight of most adolescents (n=108) were 45 kilograms and above. The 85 (55.9%) adolescents have the height below 160 cm and the 67 (44.1%) adolescents have the height of 160 cm and above.

4.2 Levels of Awareness of the Adolescents regarding Junk Food Consumption

The level of awareness of the adolescents was assessed by using twenty-items questionnaire. The findings were classified into three categories by calculating the percentages of the correct answers; below 50% as a low level of awareness, 50 - 75% as a moderate level and above 75% as a high level of awareness. The findings were shown in table (4.2) and figure (4.1).

Table (4.2) Levels of awareness of the adolescents regarding junk food consumption

Level	Level of Awareness	
	Frequency	Percent
Moderate	27	17.8
High	125	82.2
Total	152	100

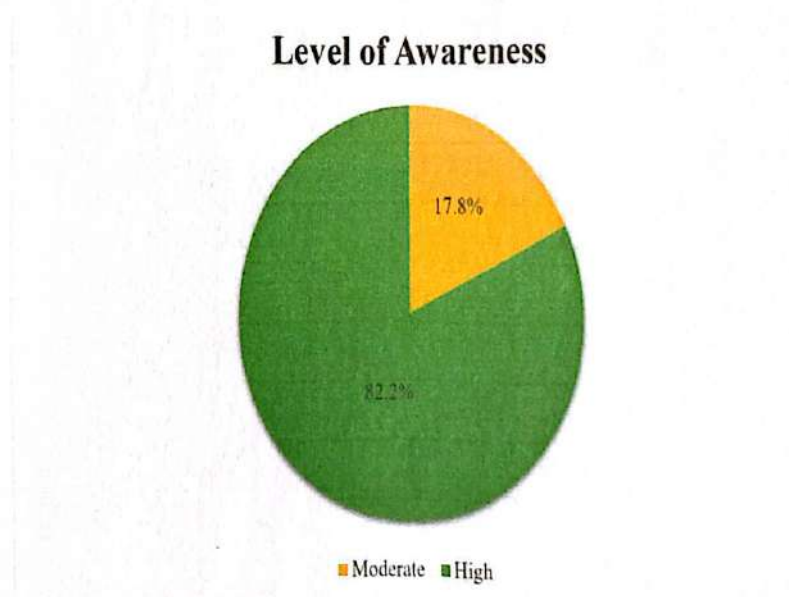


Figure (4.1) Levels of awareness of the adolescents regarding junk food consumption

According to the result shown in table (4.2) and figure (4.1), the study revealed that there was no low level of awareness among the adolescents although the awareness level was classified into low to high level. About 125 adolescents (82.2%) had high level of awareness about junk food consumption. moderate knowledge level had high knowledge level among the mothers in the intervention group. These findings exposed that most of the adolescents had an existing awareness about the junk food consumption.

4.3 Levels of Practice of the Adolescents regarding Junk Food Consumption

The level of practice of the adolescents was assessed by using 5-point Likert scale of practice questionnaires. The total scores of the level of practice ranged from 20 to 100 and the scores were classified into three categories; below 50% as a poor practice, 50- 75% as a moderate practice and above 75% as a good practice. The findings were shown in table (4.3) and figure (4.2).

Table (4.3) Levels of practice of the adolescents regarding junk food consumption

Level of Practice		
	Frequency	Percent
Poor	21	13.8
Moderate	92	60.5
Good	39	25.7
Total	152	100

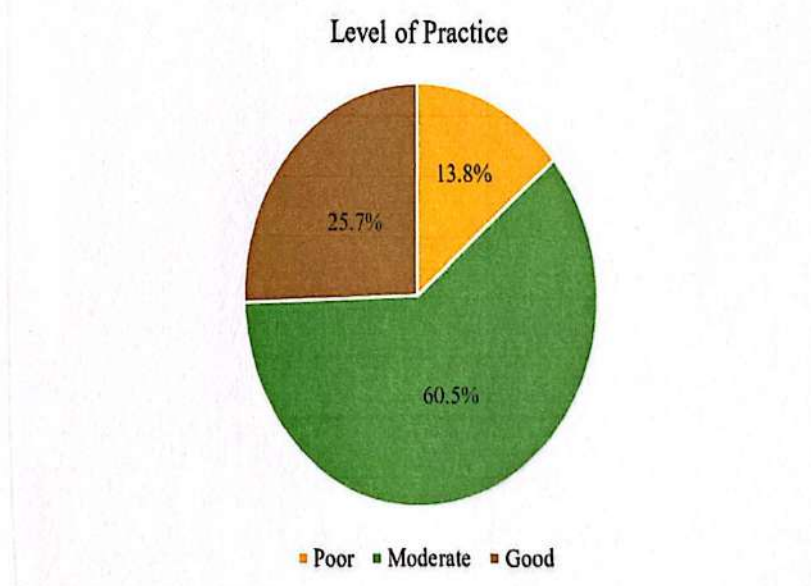


Figure (4.2) Levels of practice of the adolescents regarding junk food consumption

According to the findings shown in Table (4.3) and Figure (4.2), the study showed that most of the adolescents (60.5%) had moderate level of practice and about one fourth of the adolescents had good practice in junk food consumption. Just over 10 % of adolescents had low level of practice regarding junk food consumption. The findings of the study illustrated that most of the adolescents had moderate level of practice about the junk food consumption although 100% of the adolescents (n=152) were consuming the junk foods.

4.4 Association between Socio-demographic Characteristics and Awareness of the Adolescents regarding Junk Food Consumption

There were 8 variables in the socio-demographic characteristics and the level of awareness was divided into two categories (moderate, high). The Chi-square test was used to identify the association between socio-demographic characteristics and level of awareness about junk food consumption of the adolescents. The findings were shown in Table (4.4).

Table (4.4) Association between Socio-demographic Characteristics and Awareness of the Adolescents regarding Junk Food Consumption

Socio-demographic characteristics		Level of Awareness		Chi-Square	p-value
		Moderate	High		
Age (Years)	17	6	19	0.797	0.671
	18 and above	21	106		
Gender	Male	2	12	0.128	0.721
	Female	25	113		
Father education	Middle school and below	11	67	1.47	0.225
	High school and above	16	58		
Mother education	Middle school and below	13	64	0.83	0.774
	High school and above	14	61		
Father occupation	Own Business	13	60	0.026	0.987
	Others	14	65		
Mother occupation	Employed	13	39	3.141	0.208
	Unemployed	14	86		
Weight (Kg)	35-44	8	36	4.761*	0.092
	45 and above	19	89		
Height (cm)	Below 160	13	72	0.805	0.370
	160 and above	14	53		

According to Table (4.4), Pearson Chi-Square test was done to find the association between socio-demographic characteristics and awareness of the adolescents regarding junk food consumption. Firstly, the association between the age of the adolescents (17,18years and above) and level of awareness (moderate, high) was identified. The results showed that there was no association between age and awareness level of the adolescents ($\chi^2=0.797$, p -value = 0.671). It can be said that just over 100 adolescents with high awareness level were in the age of 18 years and above. Regarding the gender, there was no association between gender and awareness level of the adolescents ($\chi^2=0.128$, p -value = 0.721). The result showed that about 113 female adolescents and 12 male adolescents had high awareness level.

Concerning the father's, mother's education and occupation, the awareness level of the adolescents had no association with the education level as well as the occupation. Furthermore, the results showed that the weight of the adolescents was not associated with the awareness level ($\chi^2 = 4.761$, p -value = 0.092) and it found that most of the adolescents from every weight range had high awareness level about junk food consumption. The results also showed that the height of the adolescents was not associated with the awareness level ($\chi^2 = 0.805$, p -value = 0.37).

By reviewing the above findings, there is no relationship between socio-demographic characteristics and awareness of the adolescents regarding junk food consumption. Hence, junk food consumption practice is not dependent on such socio-demographic characteristics; age, gender, religion, ethnic, fathers' and mothers' education, fathers' and mothers' occupation, weight and height of the adolescents.

4.5 Association between Socio-demographic Characteristics and Practice of the Adolescents regarding Junk Food Consumption

There were 8 variables in the socio-demographic characteristics and the level of practice was divided into three categories (poor, moderate, good). The Chi-square test was done to identify the association between socio-demographic characteristics and level of practice about junk food consumption of the adolescents. The findings were shown in Table (4.5).

Table (4.5) Association between Socio-demographic Characteristics and Practice of the Adolescents regarding Junk Food Consumption

Socio-demographic characteristics		Level of Practice			Chi-Square	p-value
		Poor	Moderate	Good		
Age (Years)	17	4	17	4	10.838**	0.028
	18 and above	17	75	35		
Gender	Male	2	4	8	8.562**	0.014
	Female	19	88	31		
Father education	Middle school and below	6	57	15	11.097***	0.004
	High school and above	15	35	24		
Mother education	Middle school and below	8	50	19	1.886	0.39
	High school and above	13	42	20		
Father occupation	Own Business	15	33	25	27.137***	0.000
	Others	6	59	14		
Mother occupation	Employee	12	30	10	6.737	0.150
	Unemployed	9	82	29		
Weight (Kg)	35-44	9	29	6	11.407**	0.022
	45 and above	12	63	33		
Height (cm)	Below 160	13	55	17	3.267	0.195
	160 and above	8	37	22		

According to Table (4.5), Pearson Chi-Square test was done to find the association between socio-demographic characteristics and practice of the adolescents regarding junk food consumption. By reviewing the findings, almost all of the variables had significant association with the level of practice of the adolescents. Firstly, the association between the age of the adolescents (17,18 years and above) and level of practice (poor, moderate, good) was identified. The results showed that there was fair association between age and practice level of the adolescents at 5 % level ($\chi^2 = 10.838$, $p\text{-value} = 0.028$). Most of the adolescents in this study were in their age of 18 years and over half of them had the moderate level of practice about junk food consumption.

Regarding the gender, there was significant association between gender and practice level of the adolescents with $p\text{-value} = 0.014$. The result showed that most female adolescents ($n=88$) had moderate level of practice and over half of male adolescents ($n=8$) had good level of practice on junk food consumption. Junk food consumption practice can be influenced by a variety of factors including gender. According to the findings, the level of practice about junk food consumption seems to be better in male than in female although the proportion of male vs female was not equivalent.

Concerning the father's and mother's education, the practice level of the adolescents had association with the father's education at 5 % level ($p\text{-value} = 0.004$). As the fathers play in the main role of the family, the education about the practice of junk food consumption by the fathers seems to be more effective on the adolescents. On the other hand, it was found that the practice level of the adolescents had no association with the mother's education ($\chi^2 = 1.886$, $p\text{-value} = 0.39$).

Relating to the father's and mother's occupation, the practice level of the adolescents had significant association with the father's occupation with $p\text{-value} = 0.000$. According to the findings, most of the fathers were employed and had own business. The father's influence may have on the eating habits of family. However, it was found that the practice level of the adolescents had no association with the mother's occupation ($\chi^2 = 6.737$, $p\text{-value} = 0.510$).

Furthermore, the results showed that the weight of the adolescents was associated significantly with the practice level ($\chi^2 = 11.407$, $p\text{-value} = 0.022$). Among the adolescents of this study, just over 60 of the adolescents had the weight between 45 kg and above. Most of them were in the normal Body Mass Index (BMI). The better the

practice in junk food consumption, the more the physical fitness of the adolescents. The results of the study also showed that the height of the adolescents was not associated with the practice level about junk food consumption ($\chi^2 = 3.267$, $p\text{-value} = 0.195$). It can be assumed that there was no effect on the height of the adolescents whether the adolescents have the good level of practice on consumption of the junk food or not.

4.6 Association between Awareness and Practice of the Adolescents regarding Junk Food Consumption

The Chi-square test was used to determine the association between awareness and practice of adolescents regarding the junk foods consumption. The p -value was set as less than 0.05 to consider as statistical significance. The findings were shown in Table (4.6).

Table (4.6) Association between Awareness and Practice of the Adolescents regarding Junk Food Consumption

		Level of Practice			Chi-Square	p -value
		Poor	Moderate	Good		
Level of awareness	Moderate	2	20	5	2.629	0.264
	High	19	72	34		
Total		21	92	39		

By testing the Chi-square to identify the association, χ^2 result was 2.629 and p -value was 0.264. According to the above findings, there was no significant association between the level of awareness and practice of the adolescents regarding junk food consumption. In accordance with the current findings, previous research had also demonstrated that there was no association between the level of awareness and practice of the adolescents (Paudel and Shrestha, 2021). In this study, over 80% of the adolescents had high level of awareness and most of the adolescents had the moderate level of practice on junk food consumption. By reviewing the above findings, it can be assumed that there was no impact on practice on junk food consumption whether the level of awareness of the adolescents was high or not.

CHAPTER V

CONCLUSION

Junk food consumption among the adolescents has become a serious issue that may lead to harmful effects on health. Dietary patterns of people are shifting from homemade foods to easily accessible junk foods. Reduction in consumption of junk foods and regular intake of nutritious and healthy food can have long term effect on the present and future condition of health of the adolescents. A deeper understanding of how unhealthy or healthy dietary behaviors have impact on the life-long health condition could inform the development of more effective prevention approaches.

This study aimed to assess the awareness and practice of the adolescents regarding junk food consumption. The sample data were used the First Year students from University of Nursing, Yangon. Descriptive analysis and Chi-square test were used to describe the socio-demographic characteristics of adolescents and the levels of awareness and practice of adolescents regarding junk food consumption, to identify the relationships between socio-demographic characteristics and junk food consumption and to determine the relationship between awareness and practice of junk foods consumption.

According to the descriptive statistics, the study showed that 82.2% of the adolescents had high level and 17.8% had moderate level of awareness. Besides, for practice level, 13.8% had poor level, 60.5% had moderate level and 25.7% had good level of practice. The results from Chi-square test showed that there was no association between socio-demographic characteristics and awareness level. Nonetheless, there was significant association between most of the socio-characteristics including age, gender, father education and occupation, weight and practice of the adolescents (p -value <0.05).

In this study, most of the adolescents possessed a high level of awareness about junk foods and over half of them had a moderate consumption of junk foods in their practice. However, the adolescents were well aware about the health effects of junk foods, they prefer to eat junk foods daily instead of healthy foods. The parents and teachers play in the main role to discourage the use of junk foods and encourage to consume more effective, safe and healthy balanced diet. Moreover, there is a need to generate the awareness and instruct the practice how to reduce junk food consumption in daily life and its effect on health among the adolescents. Future studies should take into serious

consideration in the promotion of healthy dietary habits from the public health perspective.

REFERENCES

- Arya, G., & Mishra, S. (2013). Effects of Junk Food & Beverages on Adolescent 's Health – a Review Article. *IOSR Journal of Nursing and Health Science*, 1(6), 26–32.
- Ajmera, K. ,Pandit, R., Pandit, T., & Goyal, L., & . (2022). A review of national level guidelines for risk management of cardiovascular and diabetic disease. *Cureus*, 14(6)
- Bohara, S. S., Thapa, K., Bhatt, L. D., Dhimi, S. S., & Wagle, S. (2021). Determinants of Junk Food Consumption Among Adolescents in Pokhara Valley, Nepal. *Frontiers in Nutrition*, 8(April), 1–9. <https://doi.org/10.3389/fnut.2021.644650>
- Banik, R., Naher, S., Pervez, S., & Hossain, M. M. (2020). Fast food consumption and obesity among urban college going adolescents in Bangladesh: A cross-sectional study. *Obesity Medicine*, 17, 100161. <https://doi.org/10.1016/j.obmed.2019.100161>
- Boylan, S., Hardy, L. L., Drayton, B. A., Grunseit, A., & Mihrshahi, S. (2017). Assessing junk food consumption among Australian children: trends and associated characteristics from a cross-sectional study. *BMC public health*, 17(1), 299. <https://doi.org/10.1186/s12889-017-4207>
- Cochran, W.G. (1963). Sampling Techniques. Aufl. John Wiley and Sons, New York, London. <http://doi.org/10.1002/bimj.19650070312>
- Csikszentmihalyi, M. (2023, May 23). *Adolescence*. *Encyclopedia Britannica*. <https://www.britannica.com/science/adolescence>
- Fuhrman J. (2018). The Hidden Dangers of Fast and Processed Food. *American journal of lifestyle medicine*, 12(5), 375–381. <https://doi.org/10.1177/155982761876648>
- FAD advisory. (2014). Department of health, Food and drug Republic of the philippines, administration

FDA Regulations on Fast Food. (2020). <https://smallbusiness.chron.com/fda-regulations-fast-food-64834.html>

Gopal, V., Sriram, S., Kannabiran, K., & Seenivasan, R. (2012). Student's perspective on junk foods: Survey. *Sudanese Journal of Public Health*, 7(1).22-25

Gketsios, I., Tsiampalis, T., Foscolou, A., Vassilakou, T., Kannellopoulou, A., Notara, V., Antonogeorgos, G., Rojas-Gil, A. P., Kornilaki, E. N., Lagiou, A., Panagiotakos, D. B., & Kosti, R. I. (2022). The Association of Junk Food Consumption with Preadolescents' Environmental Influences: A School-Based Epidemiological Study in Greece. *Children*, 9(12), 3–12. <https://doi.org/10.3390/children9121891>

Joseph, N., Nelliyanil, M., Rai, S., Y P, R. B., Kotian, S. M., Ghosh, T., & Singh, M. (2015). Fast Food Consumption Pattern and Its Association with Overweight Among High School Boys in Mangalore City of Southern India. *Journal of clinical and diagnostic research : JCDR*, 9(5), LC13–LC17. <https://doi.org/10.7860/JCDR/2015/13103.5969>

Kumari, P. (2017). Effectiveness of Planned Teaching Program on Knowledge Regarding Harmful Effects of Junk Food among Adolescents. *International Journal of Health Sciences & Research (Www.Ijhsr.Org)*, 7(5), 176.

Laxer, R. E., & Janssen, I. (2014). The proportion of excessive fast-food consumption attributable to the neighbourhood food environment among youth living within 1 km of their school. *Applied Physiology, Nutrition and Metabolism*, 39(4), 480–486. <https://doi.org/10.1139/apnm-2013-0208>

Mandoura, N., Al-Raddadi, R., Abdulrashid, O., Shah, H. B. U., Kassab, S. M., Adel Hawari, A. R., & Jahhaf, J. M. (2017). Factors Associated with Consuming Junk Food among Saudi Adults in Jeddah City. *Cureus*, 9(12). <https://doi.org/10.7759/cureus.2008>

Mishra. G.A.S, (2013) Effects of Junk Food & Beverages on Adolescent's Health – a Review Article). *IOSR Journal of Nursing and Health Science*. 1 (6), 26-32
www.iosrjournals.org

Mohammadbeigi, A., Asgarian, A., Moshir, E., Heidari, H., Afrashteh, S., Khazaei, S., & Ansari, H. (2018). Fast food consumption and overweight/obesity prevalence in students and its association with general and abdominal obesity. *Journal of Preventive Medicine and Hygiene*, 59(3), E236. <https://doi.org/10.15167/2421-4248/JPMH2018.59.3.830>

Mohan, B., Verma, A., Singh, K., Singh, K., Sharma, S., Bansal, R., Tandon, R., Goyal, A., Singh, B., Chhabra, S. T., Aslam, N., Wander, G. S., Roy, A., & Prabhakaran, D. (2019). Prevalence of sustained hypertension and obesity among urban and rural adolescents: a school-based, cross-sectional study in North India. *BMJ open*, 9(9), e027134. <https://doi.org/10.1136/bmjopen-2018-027134>.

Mondal S S, (2021) Construction of Knowledge Questionnaire Regarding Junk Food Consumption. *International Journal of Health Sciences and Research* 11(6)doi: <https://doi.org/10.52403/ijhsr.20210615>.

Mirhadyan, Leila & Latreyi, Saeid & Afsanehpasha, & Kazem, Ehsan & Leili, Nejad & J Res Dev Nurs Midw, J.. (2020). Junk Food Consumption and its Associated Factors in High School Students in Rasht in 2017. *Journal of Research Development in Nursing and Midwifery*. 17. 52-66. 10.29252/jgbfnm.17.1.52.

Nayak, R. K. (2020). Pattern of fast or junk food consumption among medical students of north Karnataka- a cross sectional study. *International Journal Of Community Medicine And Public Health*, 7(5), 1839. <https://doi.org/10.18203/2394-6040.ijcmph20201991>

Pahari, S., & Baral, N. (2020). Perception and factors influencing junk food consumption among school children of Pokhara. *Journal of Health and Allied Sciences*, 10(2), 68-72.

Paudel, R., & Shrestha, S. (2021). Awareness and Practice of Junk Foods among Adolescents in Secondary Level Students. *Medical Journal of Shree Birendra Hospital*, 20(2), 104–109. <https://doi.org/10.3126/mjsbh.v20i2.30309>

Qiu, N., Moore, J. B., Wang, Y., Fu, J., Ding, K., & Li, R. (2021). Perceived Parental Attitudes Are Indirectly Associated with Consumption of Junk Foods and Sugar-Sweetened Beverages among Chinese Adolescents through Home Food Environment and Autonomous Motivation: A Path Analysis. *Nutrients*, 13(10), 3403. <https://doi.org/10.3390/nu13103403>

Ranabhat, K., Thapa, K., Shahi, S., & Rana, H. (2020). Risky Behaviours among Adolescent Students of Pokhara Valley: A School-Based Cross-sectional Survey. *Journal of Nepal Health Research Council*, 18(3), 453–458. <https://doi.org/10.33314/jnhrc.v18i3.2641>

Riley, M., Hernandez, A. K., & Kuznia, A. L. (2018). High Blood Pressure in Children and Adolescents. *American family physician*, 98(8), 486–494.

Sharma, V. (2013). Adolescents Knowledge Regarding Harmful Effects of Junk food. *IOSR Journal of Nursing and Health Science*, 1(6), 01–04. <https://doi.org/10.9790/1959-0160104>

Sapkota, S. D., & Neupane, S. (2017). Junk food consumption among secondary level students, Chitwan. *Journal of Nepal Paediatric Society*, 37(2), 147–152.

Stiglic, N., & Viner, R. M. (2019). Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. *BMJ open*, 9(1), e023191. <https://doi.org/10.1136/bmjopen-2018-023191>

Tamanekar, R., et al. , 2021“Survey on Junk Food and Its Toxic Effects on Youths of Sindhudurg” *International Journal of Pharmaceutical Research and Applications*.6 (4)pp: 496-507 www.ijprajournal.com.

WHO. (2020) Healthy diet. [https://www.who.int/news-room/fact-sheets/detail/healthy diet](https://www.who.int/news-room/fact-sheets/detail/healthy-diet)

WHO. (2016) Protecting children from unhealthy foods and drinks. <https://www.who.int/westernpacific/news/item/19-12-2016-protecting-children-from-unhealthy-foods-and-drinks>

Questionnaires to Assess Awareness and Practice of Adolescents regarding Junk Foods

Part I

Socio demographic characteristics

Age _____

Date of birth _____

Gender _____

Religion _____

Ethnic _____

Father's education _____

Mother's education _____

Father's occupation _____

Mother's occupation _____

Weight (in Kg) _____

Height (in cm) _____

Part II

(A) Awareness of adolescents regarding junk foods

No	Items	Yes	No
1.	I have heard about the junk foods.		
2.	I think the junk foods are harmful.		
3.	I think the junk foods make a person unhealthy.		
4.	I think the junk foods make a person overweight.		
5.	I know about the ingredients used in junk foods.		
6.	I know about the food preservatives.		
7.	I know the harmful chemicals presented in junk food. (E.g. Monosodium Glutamate(MSG) , Sodium Nitrate/Sodium Nitrite and Atrazine)		
8.	I know about the artificial/metallic colors.		
9.	I know about the empty calories.		
10.	I know to check the nutrition facts while eating junk foods.		
11.	I know that the junk food consists of high fat, salt and sugar.		
12.	I know that the junk foods can cause stomach upset.		
13.	Junk foods make me feel tired, bloated and unable to concentrate.		
14.	I know that the junk food can lead to poor bowel habits.		
15.	I know that the junk food can cause heart disease.		
16.	High intake of sweet snacks may increase the risk of weight gain and tooth decay in the short term.		
17.	I know that the junk food can cause the risk of diabetes in adulthood for adolescents in long term.		
18.	I know eating junk foods for many years can cause cancer.		
19.	Advertisement have impact on the junk food consumption.		
20.	Toxins in junk food affect the nutrient absorption.		

(B) Practice of adolescents regarding junk foods

No	Items	Always	Mostly	Often	Sometimes	Never
1.	I go outside for eating junk food.					
2.	I consume junk food while alone.					
3.	I consume junk food while together with friends.					
4.	I consume junk food while studying.					
5.	I consume junk food while watching/relaxation time.					
6.	I consume junk food while playing games.					
7.	I consume junk food while traveling.					
8.	I consume junk food only on specific occasion.					
9.	I consume junk food while no specific time.					
10.	I consume junk food at hostel/ home.					
11.	I consume junk food at university.					
12.	I consume junk food at restaurant.					
13.	I consume junk food at food-street stall.					
14.	I consume junk food on the trip.					
15.	I take junk food as an alternative to breakfast.					
16.	I take junk food as an alternative to dinner.					
17.	I buy junk food due to its familiarity with my sensory and tasty.					
18.	I buy junk food due to ease of accessibility.					
19.	I buy junk food with the good recommendation of food bloggers.					
20.	I buy junk food when I was bored to consume home-cooked food.					